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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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11/30/2001

Judith A. Bayer

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EXAMINER

LAstra, DANIEL

ART UNIT

PAPER NUMBER

3688

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 09/998,750	Applicant(s) BAYER ET AL.	
	Examiner DANIEL LASTRA	Art Unit 3688	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 December 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-21 have been examined. Application 09/998,750 (AUTOMATED PROMOTION RESPONSE MODELING IN A CUSTOMER RELATIONSHIP MANAGEMENT SYSTEM) has a filing date 11/30/2001.

Response to Amendment

2. In response to Non Final rejection filed 09/04/2008, the Applicant filed an Amendment on 12/04/2008, which amended claims 1, 5, 8, 12, 15, and 19. Applicant's amendment overcame the Section 101 and 112 rejections.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-21 are rejected under 35 U.S.C. 102(e) as being anticipated by Cook (US 6,631,360).

Claim 1, Cook teaches:

A computer-implemented method of creating customer promotion response models for use in customer relationship marketing, comprising.

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(a) generating in a computer an input data set for the response model, wherein the input data set is generated using an Analytic Data Set Template containing one or more Analytic Variables that include both primitives (see col 9, lines 35-45; col 12, lines 5-30; “data source, such as buy or no buy data”) that are base variables and conditions that are predicates, aggregates or other function where the primitives and conditions determine how the Analytical Variables are derived from operational data to produce the input data set, (col 12, lines 5-30; categories of said data source), and wherein the Analytic Variables are subdivided into independent variables and their related dependent variables (see col 12, lines 17-22) ;

(b) splitting in the computer the input data set into a test sample and a validation sample (see col 10, line 55 – col 11, line 20);

(c) identifying in the computer the independent variables and their related dependent variables using the test sample (see col 12, lines 5-45);

(d) identifying in the computer a Transformation Type for each of the identified independent variables and their related dependent variables (see col 11, lines 20-65 “estimated density function”);

(e) estimating in the computer a Coefficient for each of the identified independent variables and their related dependent variables (see col 14, lines 55-65 “each element in a decision array there is a gain or loss”);

(f) generating in the computer a Model Equation for each of the identified independent variables and their related dependent variables using the identified

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Transformation Type and estimated Coefficient (see col 13, lines 5-45 “Gaussian Density function”);

(g) validating in the computer the generated Model Equation by applying it to the validation sample (see col 11, lines 5-20 “calibration”; and

(h) scoring in the computer customers retrieved from a database using the validated Model Equation as a customer promotion response model for use in customer relationship marketing (see col 11, lines 50-67).

Claim 2, Cook teaches:

wherein the Transformation Type is a mathematical operation that identifies an association between the identified related independent and dependent variables (see col 12, lines 5-45).

Claim 3, Cook teaches:

wherein the Coefficient is a relative measure of the identified related independent and dependent variables contributions to a likelihood of response (see col 12, lines 5-20; col 13, lines 25-45).

Claim 4, Cook teaches:

wherein the Coefficient's sign indicates whether the independent variable is positively or negatively correlated with the dependent variable (see col 14, lines 55-65; “gain or loss”).

Claim 5, Cook teaches:

wherein the Model Equation is a mathematical representation of the association of the identified related independent and dependent variables that result in a statistical best fit of known responders versus non-responders (see col 12, lines 5-12).

Claim 6, Cook teaches:

wherein the validating step (g) further comprises applying the generated Model Equation to the validation sample in order to predict a likelihood of response as compared to an actual response in the validation sample (see col 11, lines 5-20; col 13, lines 5-45).

Claim 7, Cook teaches:

wherein the scoring step (h) further comprises applying the validated Model Equation to the customers retrieved from the database in order to predict responses from the customers in a future promotional campaign (see col 11, lines 50-65; col 13, lines 5-45).

Claims 8-14 are written as system claims but contains the same limitations as claims 1-7, therefore, the same rejection is applied.

Claims 15-21 are written as article of manufacturer claims but contains the same limitations as claims 1-7, therefore, the same rejection is applied.

Response to Arguments

4. Applicant's arguments filed 12/04/2008 have been fully considered but they are not persuasive. The Applicant argues that Cook does not teach "generating an input data set for the response model, wherein the input data set is generated using an Analytical Data Set template containing one or more Analytical Variables that include

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both primitives that are base variables and conditions that are predicates, aggregates or other functions that describe how the Analytical Variables are derived from operational data to produce the input data set” and wherein the Analytic Variable are subdivided into independent variables and their related dependent variables”. The Applicant further argues that Cook does not teach how this data is created, other than by profiling or collecting, that Cook does not teach “Analytical Data Set templates to generate data and that Cook does teach that the Analytical Data Set templates contain analytical variables and that Cook does not generates its input data set from operation data using primitives and conditions of Analytical Variables contained within Analytical Data Set Templates. The Examiner answers that Cook teaches selecting a test sample or training sample and a validating sample (i.e. unknown sample data) from a data source (see col 8, lines 20-25, col 15, lines 1-12) and where said training and validating data contains analytical variables which contains independent and dependent variables. Applicant’s specification mentions in page 6 lines 15-32 that “Analytical variables are comprised of primitives and conditions that describe how the Analytical Variable are derived from the operational data. Primitives are base variables, while conditions are predicates, aggregates or other functions.” The Applicant’s specification page 6 gives an example, where it recites “for example “Sum of sales” in “Merchandise Department” during “Last 6 months” may identify hundreds of variables. However, the system could create an Analytical Variable by summing a “Sales” base variable (i.e. primitive) associated with multiple primitives (e.g. Department and Transaction Date variables) and conditions (e.g. Department = “Merchandise” and Transaction date > “February 1, 2001”).

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Thereafter, the user creates an Analytical Data Set Template containing the desired Analytical Variables required for a specific analysis task". Therefore, according to the Applicant's specification, said limitation of "Analytical Variables that include both primitives that are base variables and conditions that are predicates, aggregates or other functions that describe how the Analytical Variables are derived from operational data" simply means, according to Applicant's specification, selecting the Analytical variables from base variables by applying some type of condition selection to said base variables. Applicant's specification only recites "that conditions are predicates, aggregates or functions" and nothing else. Cook teaches selecting a base variable category (i.e. buyer/non-buyer) and applying some type of selection function to said data, which for example, is "n selected individuals' related data is removed from the training data structure" in order to create Analytical variables to be used in a density function for each category based on the training data structure with the selected individual's data removed" (see col 3, lines 30-40). Cook teaches applying conditions to primitive data (i.e. categories) in order to determine which analytical variables to use in order to predict if buyers/non buyers, therefore, creating an Analytical Set template. Furthermore, Cook teaches that that data source may include independent (i.e. profile features such as buy or not buy) and dependent variables (i.e. category into which a profile individual falls) (see col 12, lines 10-30). Therefore, contrary to Applicant's argument, Cook teaches Applicant's claimed limitation.

The Applicant argues that Cook does not teach "splitting the input data set into a test sample and a validation sample. The Examiner answers that Cook teaches

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selecting (i.e. generating) a test sample (i.e. training sample) and a validation sample (i.e. unknown sample) from a data source (see col 15, lines 1-15; col 8, lines 20-25). Therefore, contrary to Applicant's argument, Cook teaches "splitting" the data source into a training sample and a validation sample.

The Applicant argues that Cook does not teach "identifying independent and their related dependent variables using the test sample". The Examiner answers that Cook teaches identifying independent and dependent variables from a test or training sample (see col 12, lines 15-25). Therefore, contrary to Applicant's argument, Cook teaches Applicant's claimed invention.

The Applicant argues that Cook does not teach "identifying a transformation type, for each of the identified independent and their related dependent variables, where the transformation type provide the strongest association between the identified related independent variable and the dependent variables and generating a Model Equation for each of the identified independent and their related dependent variables using the identified Transformation type and estimated coefficient". The Examiner answers that Cook teaches probability density functions that result in normal or quadratic decision surfaces (see col 10, lines 1-10), where said density function is used to create a decision array (see col 3, lines 45-55) and where each element of the decision array there is a gain or loss (see col 14, lines 55-65) which shows an association between the identified related independent variables (i.e. individual profile features see col 10, lines 55-65) and the dependent variables (i.e. category into which a profile individual falls)

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(see col 12, lines 10-30). Therefore, contrary to Applicant's argument, Cook teaches Applicant's claimed limitation.

The Applicant argues that Cook does not teach "estimating a coefficient for the identified related independent and dependent variables". The Examiner answers that Cook figures 12 and 13 teach estimating coefficients (i.e. density value) for each independent and dependent variable of said graph. Therefore, contrary to Applicant's argument, Cook teaches Applicant's claimed limitation.

The Applicant argues that Cook does not teach a transformation type because Cook's density function relates to the "distribution" of independent variables among categories, whereas Applicant's model equations relates to why (mathematical) an associated independent variable is associated with a particular dependent variable. The Examiner answers that the Applicant is arguing about limitation not stated in the claims when he mentions that Applicant's claims recite "why" a variable is associated with another. However, Cook teaches said association between independent and dependent variables in col 12, lines 10-25). Therefore, contrary to Applicant's argument, Cook teaches Applicant's claimed invention.

The Applicant argues that Cook does not teach "validating the generated Model Equation by applying it to validation sample". The Examiner answers that Cook teaches performing a calibration process to determine the accuracy of a forecast (see col 11, lines 5-20). Therefore, contrary to Applicant's argument, Cook teaches Applicant's claimed invention.

The Applicant argues that Cook does not teach “scoring customers retrieved from a database using a Model Equation”. The Examiner answers that Cook figures 12 and 13 teach determining the relative density value (i.e. score) for each individual category, feature and category. Therefore, contrary to Applicant’s argument, Cook teaches Applicant’s claimed limitation.

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DANIEL LASTRA whose telephone number is 571-272-6720 and fax 571-273-6720. The examiner can normally be reached on 9:30-6:00.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James W. Myhre can be reached on (571)272-6722. The official Fax number is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/DANIEL LASTRA/
Examiner, Art Unit 3688
March 11, 2009